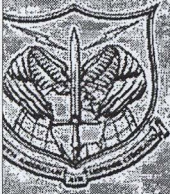


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NORTH AMERICAN AIR DEFENSE COMMAND

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WEEKLY INTELLIGENCE REVIEW (U)

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Weekly
Intelligence
Review

Issue No. 34/64, 21 August 1964

The WIR in Brief

Portion identified
as non-responsive
to the appeal

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to the appeal

Space

COSMOS 37 APPARENTLY A ROUTINE OPERATION;
MISSION PROBABLY PHOTORECONNAISSANCE

The 13th Cosmos launch of 1964.

3 COSMOS SATELLITES LAUNCHED WITH 1
ROCKET

New booster reportedly tested.

Portion identified
as non-responsive
to the appeal

COVER: Soviet missile-firing patrol boats
(from Red Star) (OFFICIAL USE ONLY)
NOTE: Pages 32, 34, 35, 38, and 39 of this
issue are blank.

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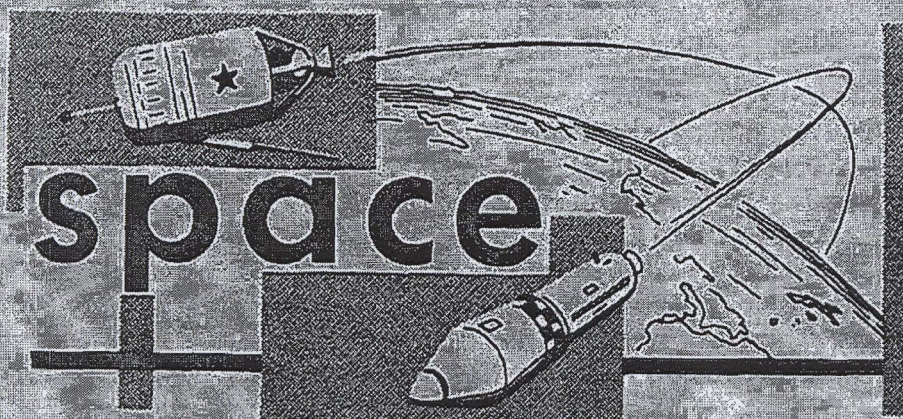
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significant
intelligence
on space
developments
and trends

Cosmos 37 Apparently a Routine Operation; Mission Probably Photoreconnaissance

The Soviets launched Cosmos 37 from Tyuratam at about 0930Z, 14 August. Initial parameters have been furnished as follows:

	<u>By SPADATS</u>	<u>By TASS</u>
Inclination to Equator	64.96 degrees	65 degrees
Period	88.98 minutes	89.45 minutes
Apogee	240.48 kilometers (129 n.m.)	300 kilometers (161 n.m.)
Perigee	209.18 kilometers (112 n.m.)	205 kilometers (110 n.m.)

50X1 and 3, E.O.13526

The new Soviet vehicle has all the attributes of the usual recoverable Tyuratam-launched Cosmoes, which are believed to have photoreconnaissance as their primary mission. The orbit is relatively low and perigee occurs over the US and southern Canada during hours favorable for photography. Cosmos 37 will probably be de-orbited on 22 August, nearly 8 days after launch, on Orbit 126, 127, or 128.

This vehicle is the 13th Cosmos to be launched this year -- one more than was launched in each of the preceding two years.

(SPADATS, TASS, NORAD)

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3 Cosmos Satellites Launched with 1 Rocket

The Soviets launched 3 payloads into orbit on 18 August, using one carrier rocket. The fact that all 3 payloads are relatively close together and in essentially the same orbit suggests that the payloads were injected into orbit as a unit and then separated from each other mechanically. The US has carried out similar operations several times in the past, although this is the first time that the Soviets have done so. This type of operation is essentially different from that used to orbit the Soviet Electron vehicles in pairs on 30 January and 10 July 1964: in each of these cases, one payload was separated from the injection stage rocket while it was still burning, the second payload being separated later and injected into an orbit very different from that of the first payload.

The new vehicles have been labeled Cosmoes 38, 39, and 40 by the Soviets.

Launch and Propulsion. Launch took place at the Tyuratam Missile Test Range at about 0915Z, 18 August 1964. The Soviets announced that the vehicles were orbited by a single booster of a new type and that the launch had confirmed the high technical characteristics of the new rocket. The lack of any reported [] during the boost phase of this launch precludes any analysis of the booster system used.

Orbital Parameters. TASS has announced orbital parameters as follows for all three vehicles:

Inclination	56.3 degrees
Period	95.2 minutes
Apogee	876 kilometers (470 n.m.)
Perigee	210 kilometers (113 n.m.)

SPADATS data yields initial orbital parameters on five of the objects associated with this launch roughly as follows:

	<u>853</u>	<u>854</u>	<u>855</u>	<u>856</u>	<u>857</u>
Inclination (degrees)	56.13	56.10	56.10	56.14	56.14
Period (minutes)	94.32	94.62	94.05	95.24	94.89
Apogee (km)	769	801	745	855	824
Apogee (n.m.)	415	432	402	462	445
Perigee (km)	207	203	205	209	207
Perigee (n.m.)	112	110	111	113	112



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Object 853 is identified as Payload #2, 854 as Payload #3, and 855 as Payload #1. The order of the objects in flight (the first one leading) is 855, 853, 854, 857, and 856. There is presently no means of correlating the SPADATS Object numbers with the Soviet-assigned Cosmos numbers.

Configurations and Spin. Initial radar signature analysis of the objects by SPADATS indicates the following for the three apparent payloads:

- Payload #1: Possibly spin stabilized -- tumbling or spinning with period of 4.2 seconds; basically cylindrical with truncated cone on one end and possible antenna; about 7 feet long and 2 feet in diameter.
- Payload #2: Possibly spin stabilized -- tumbling or spinning with period of 5.3 seconds; basically cylindrical with short cone on one end and 2 antennas; 3-6 feet long and 1.5-2.6 feet in diameter -- may be same basic shape and size as Payload #1.
- Payload #3: Spin stabilized with period of 25.6 seconds; basically cylindrical with conic section at one end; apparently about 12 feet long by 5 feet in diameter, but these values may be too large if antenna reflections have enhanced the radar returns.

Electronic Configuration. The Soviets have announced that the new satellites are transmitting on frequencies of 20.034 and 90.156 mc/s; 20.084 and 90.378 mc/s; and 19.800 and 89.102 mc/s; the West has made intercepts on all these frequencies.

Mission. The Soviets have announced that the new Cosmos vehicles are carrying on the scientific exploration of near-Earth space. This is very likely the case. For example, the fact that the transmissions are paired in such manner that one is exactly 4.5 times another frequency indicates that the transmissions could be used to measure the electron density of the ionosphere. A photoreconnaissance mission is unlikely in view of the apparent spin-stabilization of the vehicles; a photorecce mission would call for Earth orientation. Meteorological reconnaissance would seem to be ruled out for the same reason, and also by the lack of video signals. All indications are that the vehicles are not manned and will not be recovered.

Possible missions of the launch other than measuring electron density, could include testing of the new booster and of techniques for injecting 3 payloads into orbit simultaneously and then separating them.

(SPADATS; NORAD; ELINT from various monitors)

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